

Ghana - Agriculture - Irrigation

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Overview

Identification

COUNTRY

Ghana

EVALUATION TITLE

Agriculture - Irrigation

EVALUATION TYPE

Independent Impact Evaluation

ID NUMBER

DDI-MCC-GHA-NORC-Irr-2013-v01

Version

VERSION DESCRIPTION

Anonymized dataset for public distribution

Overview

ABSTRACT

The Millennium Development Authority (MiDA) financed the construction of a new irrigation scheme in Kpong and the renovation of two irrigation schemes in Botanga and Golinga. This data contains baseline information for the impact evaluation of this activity.

Treatment groups involve households with farmers who belong to FBOs within the geographic perimeters of the new/renovated irrigation schemes; these treatment groups are provided contracted access to an anchor farm that will enable them to receive irrigation. Comparison groups are households outside the water supply perimeters provided by the new/renovated irrigation scheme with characteristics similar to those of households in the treatment groups.

The three main research questions this evaluation will try to answer (once endline data is collected), presented in form of hypotheses to be tested, are: i) new irrigation schemes will raise production from 2 to 3 crops per year; ii) irrigation will allow for diversification of crops and potentially higher yields; and iii) irrigation will increase labor requirements. From these three hypotheses, there are five indicators that can be used to measure the impact of these irrigation activities: (1) total household income; (2) total household income from crop production; (3) paid employment per household; (4) crop mix - annual production output (kilograms) for each of the five most imported crops per household (i.e. want to observe move from low to high-value crops); and (5) crop yield (i.e. monitor output per unit, kilogram/hectare per crop cycle).

To evaluate this program, once endline data is collected, NORC proposed to use a difference-in-difference approach and an IV approach based on a distance indicator (i.e. instrument treatment with "farmer's distance from anchor farm" if we can assume small farms closer to anchor farms are more likely to benefit from activity).

In terms of descriptive statistics there is no clear evidence that households in the treatment group are better or worse off than households in the comparison group at baseline. There are, however, important differences to consider. While the household head in the treatment group is more likely to be female, slightly less educated, and live in an informal dwelling, they were more likely to have children currently attending school. Households within the treatment group also had, on average, higher income, though the variance was high (as is the case with income in general), and the difference was not statistically significant. With respect to farming activities, there are two important differences to highlight across experimental groups. First, households in comparison groups were more likely to own their own plots. This is important because the impact of irrigation activities could be confounded if the households in the treatment group are less likely to make long-term investments than households in the comparison group. Second, households in the treatment group owned smaller plots of land in terms of area, on average.

UNITS OF ANALYSIS

Households

Coverage

GEOGRAPHIC COVERAGE

The baseline data includes information from three irrigation schemes in Ghana and their vicinities: Kpong Left Bank, Bontanga and Golinga.

UNIVERSE

Farmer households.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
National Opinion Research Center	

FUNDING

Name	Abbreviation	Role
Millennium Challenge Corporation	MCC	

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Millennium Challenge Corporation	MCC		Review of Metadata
National Opinion Research Center	NORC		Documentation of the study

DDI DOCUMENT ID

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MCC Compact and Program

COMPACT OR THRESHOLD

Ghana Compact I

PROGRAM

These reports focus on the Agriculture Project. Particularly, this data focuses on the Irrigation Activity.

MCC SECTOR

Agriculture and Irrigation (Ag & Irr)

Sampling

Study Population

Farmer households.

Sampling Procedure

Farmers in the treatment group are those that belong to FBOs that operate within the geographic perimeters of the irrigation scheme, and will be able to receive irrigation. Farmers in the comparison group are outside the water supply perimeters, meaning they do not receive the benefits of the irrigation schemes, but are similar in characteristics to the treatment farmers. In total we have 656 farmer households in our sample.

Weighting

No weights are implemented in this analysis because its objective is not to replicate parameters for a certain population but to evaluate the impact of the intervention.

Questionnaires

No content available

Data Collection

Data Collection Dates

Start	End	Cycle
2012-09-11	2012-12-09	Irrigation Baseline

Data Processing

No content available

Data Appraisal

No content available